AMENDMENTS TO THE DRAWINGS:

Applicants submit concurrently herewith one sheet of annotated drawings illustrating Figs. 1-3 with proposed amendments, accompanied by one sheet of replacement drawings incorporating such changes.

Attachments: Replacement Sheet (1)
Annotated Sheet Showing Changes (1)

REMARKS/ARGUMENTS

Reconsideration of this application is respectfully requested.

The rejection of claims 1-7, 12-15, 17-36 and 38-44 under 35 U.S.C. §102 as allegedly anticipated by Udd '967 is respectfully traversed.

Clearly, the Udd Fig. 5 embodiment cited by the Examiner represents an entirely different architecture to that of the presently claimed invention. In Udd, two signal copies of a given pair are launched in opposite directions along a loop – rather than in the same direction as in the applicants' invention.

This is an important difference, because the Udd loop arrangement requires transmitter 92 to be offset from the center of the loop, such that the path lengths along the two senses of the loop to the transmitter are different. This difference would lead a skilled person away from the applicants' invention, since applicants launch signals in the same direction. Consequently, the path lengths to the transmitter (that is, between the first and second location) are the same for both signals. Launching the signals in the same direction along a common waveguide represents a much more simple arrangement than in Udd (e.g., since a loop is not required).

Given this fundamental deficiency of Udd, it is not necessary to discuss further deficiencies of Udd with respect to other aspects of the rejected claims since a *prima*

facie case of anticipation requires that each and every feature of each rejected claim be found in a single cited reference.

The rejection of claims 8-11, 16 and 37 under 35 U.S.C. §103 based on Udd in view of Davis '459 is also respectfully traversed.

Fundamental deficiencies of Udd have already been noted above. Davis does not supply those deficiencies – and, in fact, teach against supplying such deficiencies as will be explained in more detailed below.

Although Davis discloses an unbalanced interferometer, the information to be transmitted in Davis is applied to a carrier signal in the unbalanced interferometer. The signal from the interferometer, which includes the applied information, is then transmitted to a remote location, where the information is extracted.

However, in the applicants' invention, the carrier signal itself is output from the interferometer – and transmitted to a remote location where the information is to be applied. This is clearly required by the claims because the signal copies must be transmitted from a first location, and the data is applied (mixed) at a second location. The transmitted information is extracted back at the first location – that is, the location where the signal copies are generated. The interferometer arrangement in Davis is, therefore, being used in a completely different way to that in which it is being used in the applicants' claimed invention.

In fact, Davis teaches directly away from both (a) generating the carrier signal and (b) extracting the information from the carrier signal at the same location – that is, using the same interferometer. In Davis, there is provided a one-way isolator to prevent signals returning to the interferometer. Such an isolator would, at the very least, greatly complicate embodiments of the applicants' invention, since applicants rely on signals being able to return from the second location back to the first location.

Furthermore, the Davis system relies on the path difference in the interferometers being matched to that of the receiver. This relies on a careful physical match of fibre length: that is, it will require the system to be effectively tuned. However, in the applicants' invention, this is not necessary since the same interferometer is used to both (a) generate the carrier signal and (b) extract the information therefrom. Since the same interferometer is being used for both purposes, the need to tune the system as is done in Davis is reduced or even entirely eliminated.

Considering, *arguendo*, the combination of Udd and Davis: in Udd, signal copies travel in opposite directions along a loop, the signals acting as carriers upon which information is applied. In contrast, Davis transmits the information by applying it to a carrier signal at an interferometer before being transmitted.

In Udd, the loop itself represents an interferometer, and so it would be counter-intuitive to include an additional interferometer to the one already present in Udd, since the interferometer arrangements in both Udd and Davis are present for the same reason (i.e., to provide a carrier signal over which information can be applied).

It is respectfully submitted that the completely different approaches of Udd and Davis are, therefore, incompatible and, in fact, alternatives to one another. A skilled person with actual skill would, therefore, not seek to combine the teachings of these documents.

Accordingly, it is not believed necessary to discuss further deficiencies of this allegedly "obvious" combination of references with respect to other aspects of the rejected claims. Suffice it to note that, as a matter of law, it is impossible to support a *prima facie* case of obviousness unless the asserted references teach or suggest each and every feature of the applicants' invention – and do not "teach away" from the claimed invention when considered "as a whole" as it must be under 35 U.S.C. §103.

Accordingly, this entire application is now believed to be in allowable condition, and a formal notice to that effect is earnestly solicited.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: _____
Larry S. Nixon, Reg. No. 25,640
Chris Comuntzis, Reg. No. 31,097

LSN:lef

901 North Glebe Road, 11th Floor
Arlington, VA 22203-1808
Telephone: (703) 816-4000
Facsimile: (703) 816-4100

ANNOTATED MARKED UP DRAWINGS FOR SN 10/573,266

Fig.1.

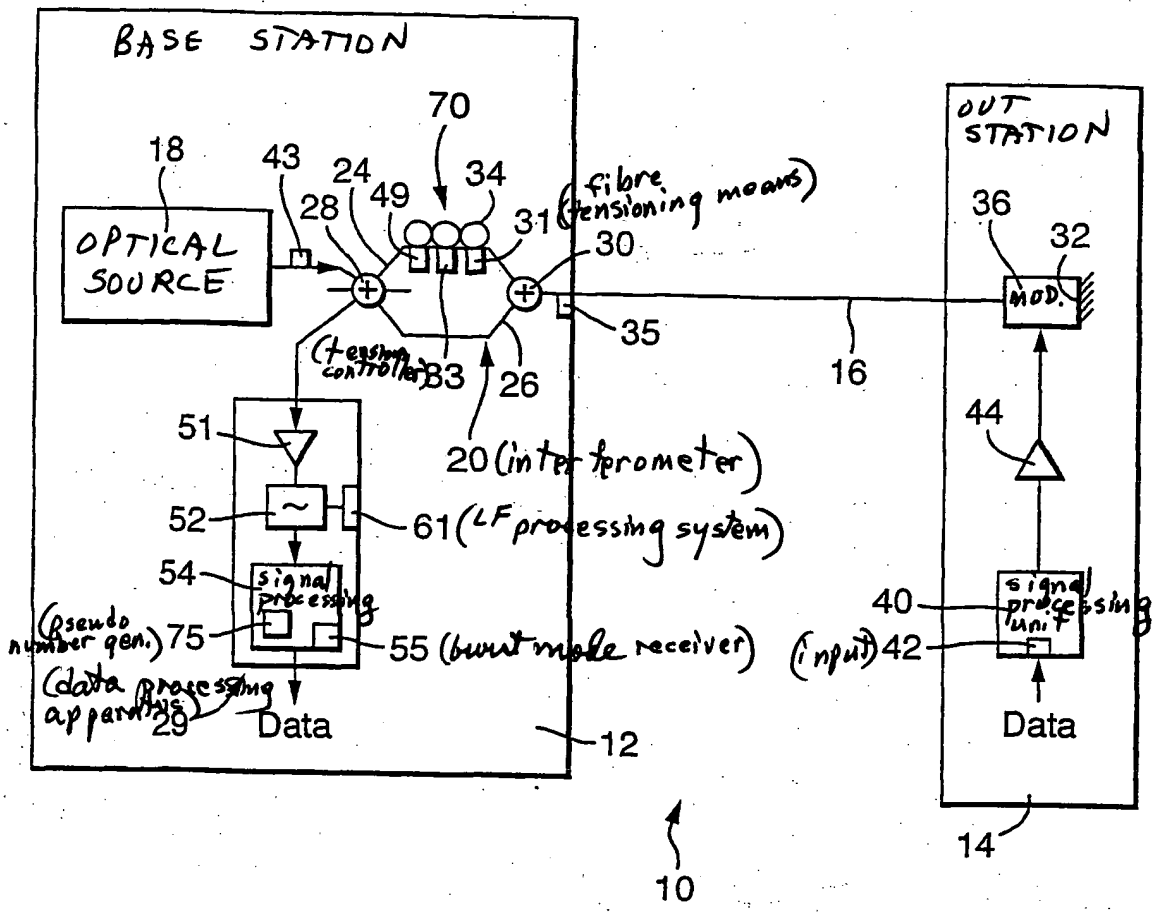

Fig.2.

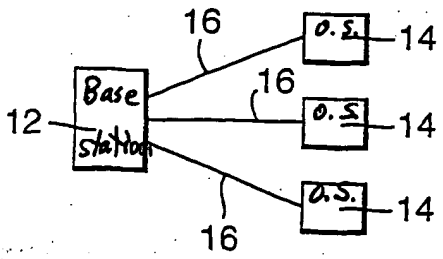

Fig.3.